

REMARKS

The Office Action of May 13, 2008 has been reviewed and the comments therein carefully considered. The present Amendment amends independent claim 1. No new matter has been added. Support for these amendments can be found in the specification and drawings as originally filed. Specifically, support for these amendments can be found on page 19, line 16 to page 20, line 15 and page 21, line 5 to page 22, line 20 of the specification of the present invention. The present Amendment also cancels claim 2. Accordingly, claims 1, 3 and 4 are currently pending, and claim 1 is in independent form.

35 U.S.C. §112 Rejections

Claims 1-4 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Examiner contends that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Examiner further contends that it cannot be understood how an etching solution will take or eliminate some of the remaining metal material, and at substantially the same time, passivate the remaining non-preferred metal particles. In addition, the Examiner contends that it cannot be understood why the etchant responsible for the acts of etching the remaining metal particles will not also etch/passivate the wiring patterns.

The Applicants believe that the above amendments to claim 1 overcome the Examiner's enablement rejection. Reconsideration and withdrawal of this rejection are respectfully requested.

Claims 1-4 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. The Applicants also believe that the above amendments to claim 1 overcome the Examiner's indefiniteness rejections. Reconsideration and withdrawal of these rejections are respectfully requested.

35 U.S.C. §103 Rejection

Claims 1-4 stand rejected under 35 U.S.C. §103(a) for obviousness based upon United States Patent No. 5,207,867 to Cordani (hereinafter "the Cordani patent"). In view of

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the above amendments and the following remarks, the Applicants respectfully request reconsideration of this rejection.

As defined by amended independent claim 1, the present invention is directed to a process for producing a printed wiring board. The process includes the steps of depositing a base metal of nickel and chromium on at least one surface of an insulating film to form a base metal layer and depositing a conductive metal layer of copper or a copper alloy on a surface of the base metal layer, thereby forming a surface metal layer; selectively removing the surface metal layer by etching with an etching solution containing at least one selected from ferric chloride, cupric chloride, and a mixture of sulfuric acid and hydrogen peroxide to form a wiring pattern; microetching the surface metal layer with a solution containing potassium persulfate; and treating the base metal layer with an etching solution containing at least one selected from a mixture of potassium permanganate and KOH, potassium bichromate, and a mixture of sodium permanganate and KOH.

The Cordani patent is directed to a process for fabricating a printed circuit in which a printed circuit material, composed of an insulating substrate resin material having a thin metal cladding layer adhered to at least one surface thereof, is treated to remove all or selected portions of the metal cladding layer, thereby exposing the underlying insulating substrate resin material. The process further includes contacting the exposed insulating areas with a liquid treatment composition comprising an aqueous acidic solution containing fluoride ion. This liquid treatment brings about a microetching of the surface of the exposed insulating areas to a degree sufficient to loosen and remove a sufficient quantity of the metal species originally affixed to or associated with the surface so as to result in the surface having a greater electrical resistance than existed before the contacting.

The Applicants would like to note that the Examiner did not list the Cordani patent on the Notice of References Cited (Form PTO-892). Accordingly, the Applicants respectfully request that the Examiner list this reference on a Notice of References Cited in his next communication.

The Cordani patent does not teach or suggest microetching the surface metal layer with a solution containing potassium persulfate as required by amended independent claim 1. While the Cordani patent discloses the use of an aqueous acidic solution containing fluoride ion to bring about a microetching of the surface of the exposed insulating areas to a degree sufficient to loosen and remove a sufficient quantity of the metal species (see column

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5, line 42 to column 6, line 8 of the Cordani patent), this reference does not teach or suggest that the surface metal layer is micro-etched with a solution containing **potassium persulfate**. In addition, the Cordani patent does not teach or suggest the step of treating the base metal layer with an etching solution containing at least one selected from a mixture of potassium permanganate and KOH, potassium bichromate, and a mixture of sodium permanganate and KOH as required by amended independent claim 1.

As set forth in MPEP §2143.03, to establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. Where claimed limitations are simply not present in the prior art, a *prima facie* obviousness rejection is not supported. Since the Cordani patent fails to teach or suggest that the surface metal layer is micro-etched with a solution containing potassium persulfate, or the step of treating the base metal layer with an etching solution containing at least one selected from a mixture of potassium permanganate and KOH, potassium bichromate, and a mixture of sodium permanganate and KOH as required by amended independent claim 1, a *prima facie* case of obviousness has not been established.

For the foregoing reasons, the Applicants believe that the subject matter of amended independent claim 1 is not rendered obvious by the Cordani patent. Reconsideration and withdrawal of the rejection of claim 1 is respectfully requested.

Claims 3 and 4 depend from and add further limitations to amended independent claim 1 and are believed to be patentable for the reasons discussed hereinabove in connection with amended independent claim 1. Reconsideration of the rejection of claims 3 and 4 is respectfully requested.

35 U.S.C. §102 Rejection

The Examiner has also rejected claims 1-4 under 35 U.S.C. §102(a) as being anticipated by Japanese Patent Publication No. JP 2003-188495 to Yoshiyuki et al. (hereinafter “the Yoshiyuki publication”). In view of the above amendments and the following remarks, the Applicants respectfully request reconsideration of this rejection.

As discussed in greater detail hereinabove, the present invention is directed to a process for producing a printed wiring board.

The Yoshiyuki publication is directed to a process for forming a printed wiring board in which a pattern is formed by etching a metal-coated polyimide film fashioned on

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one or both surfaces of a polyimide resin film. After etching, the etched surface is oxidized with at least one kind of oxidizing agent selected from among potassium permanganate, potassium dichromate and hydrogen peroxide.

The Yoshiyuki publication does not teach or suggest microetching the surface metal layer with a solution containing potassium persulfate. Instead, the Yoshiyuki publication only describes the step of oxidizing the etched surface with an oxidizing agent after etching the metal-coated polyimide film.

In addition, the Yoshiyuki publication describes that the insulation resistances in Examples 1 through 6 thereof are between 8×10^9 to $1 \times 10^{11} \Omega$. These values are the same as for Comparative Example 1 presented in Table 1 on pages 43 and 44 of the specification of the present invention.

A machine translation and a partial translation of the Yoshiyuki publication are enclosed herewith.

For the foregoing reasons, the Applicants believe that the subject matter of amended independent claim 1 is not anticipated by the Yoshiyuki publication. Reconsideration of the rejection of claim 1 is respectfully requested.

Claims 3 and 4 depend from and add further limitations to amended independent claim 1 and are believed to be patentable for the reasons discussed hereinabove in connection with amended independent claim 1. Reconsideration of the rejection of claims 3 and 4 is respectfully requested.

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Conclusion

Based on the foregoing amendments and remarks, reconsideration of the rejections and allowance of pending claims 1, 3 and 4 are respectfully requested. Should the Examiner have any questions regarding any of the foregoing, the Examiner is invited to contact Applicants' undersigned representative at the telephone number provided below.

Respectfully submitted,
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